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SYNOPSIS OF THE NORTH AMERICAN HYPOCREACEAE, WITH DESCRIPTIONS OF THE SPECIES.

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(Continued from page 31.)

B. MYCOGENÆ.

13. CORDYCEPS OPHIOGLOSSOIDES (Ehr.) Parasitic on *Elaphomyces granulatus* and *E. muricatus*. Massachusetts (Farlow), New Jersey (Ellis), Pennsylvania (Everhart).

Stromata solitary, rarely cæspitose, simple, or very rarely branched, flexuous, subcompressed, carnose, yellow within, 8—12 cm. high, 5—8 millim. thick; head oblong, obtuse, or attenuated above, often hollow, roughened by the slightly projecting, densely crowded perithecia, dark-rufous, about 2 cm. long and 6—8 millim. thick; stem olivaceous, becoming black, sending out, from its base, yellow fibrous rootlets, which embrace the matrix and penetrate the soil for 2 or 3 inches around; asci cylindrical, 250—300 x 7—9 *u*, 8-spored; sporidia crowded, filiform, 150—180 x 7—9 *u*, multiseptate, at length breaking up into subellipsoid, yellowish-hyaline joints, 3—4 x 2—3 *u*; paraphyses very slender.

14. CORDYCEPS CAPITATA (Holmsk.) Link. Hand-bk. III, p. 347. Pers. Myc. Eur., tab. 10, fig. 1—4. Parasitic on *Scleroderma*, Carolina (Ravenel), Fungi Car. Exsicc., V, No. 48.

Stromata cæspitose, or solitary, simple, 3—8 cm. high; club, or head, ovoid-sphæroid, roughened by the slightly prominent, ovoid, densely crowded perithecia, liver-color or reddish-yellow, about 1 cm. thick; stipe equal, glabrous, citron color, or yellow, at length fibrose-strigose and yellowish-black, 3—4 millim. thick; asci cylindrical, very long, 15 *u* thick; sporidia filiform, very long, at length breaking up into fusoid-elongated, or subbacillary joints, greenish-yellow and 25—40 x 5—6 *u*.

C. SPECIES IMPERFECTLY KNOWN.

15. CORDYCEPS HERCULEA, Schw. Syn., N. Am., 1153. On the ground, among fragments of decaying wood. Salem, N. C. (Schweinitz).

Head large (12 millim. thick), ovate-clavate, obtuse, decurrent on the attenuate-elongated stem, alutaceous (leather color), yellow within, stipe also yellow; perithecia rather small, concolorous. Height of the whole fungus, about 1½ inches (36 millim.)

In Curtis' Catalogue, pp. 138 and 139, two other species are mentioned, but not described:

16. CORDYCEPS GRYLLOTALPÆ, M. A. C. On buried Sand moles.

17. CORDYCEPS ISARIOIDES, M. A. C. On dead moths.

GEN. III, EPICHLOE, FRIES.—Stroma effused, mostly amplexicaul; sporidia filiform.

18. EPICHLOE TYPHINA (Pers.)

Stroma pale, thin, surrounding the sheaths and included culms of living grasses (Phleum pratense, Dactylis glomerata and Carex, fide Peck), extending longitudinally for 2—5 cm., and bearing, in the early stage of growth, small, (4–5 x 3 *u*), ovoid, hyaline conidia (Sphacelia typhina, Sacc.), finally covered with a layer of semi-immersed, soft, carnose-membranaceous, yellow perithecia, with somewhat prominent ostiola. Asci cylindrical, 150—230 x 7—9 *u*, slightly narrowed above, with the apex truncate, and capped with a subhemispherical, hyaline crest; sporidia 8 in an ascus, filiform, yellowish, multinucleate (becoming multiseptate) and nearly as long as the asci.

The species is common in Europe, and appears also to be widely diffused in this country. It is reported from Carolina to Pennsylvania and Iowa, and from Northern New York and Canada.

GEN. IV, HYPOCREA, FRIES.—Perithecia immersed in a pulvinate, or effused, subsuperficial stroma. Sacc. Syll. II, p. 581.

A. *Stroma vertically elongated.*

19. HYPOCREA PETERSII, B. & C. Grev. IV, p. 13.

"Agariciformis; stipite rugoso; peritheciis peripheriçis; ascis linearibus; sporidiis globosis.

At first sight, this looks like an Agaric invested with some *Hypomyces*, but the fructification is exactly that of a *Hypocrea*. Stem irregular, dilated upwards, about an inch high; head orbicular, irregular, rufous; perithecia both on the under and upper sides; sporidia globose in linear asci." Found in Alabama, by Hon. J. M. Peters.

20. HYPOCREA ALUTACEA (Pers.)

On bark of a decaying (maple?) limb, lying on the ground. Newfield, N. J. (Stroma?) about 2 cm. high, clavate, leather-color. Only two specimens were found, and those were immature, so that the fructi-

fication could not be made out, though the surface of the club was finely punctate from the ostiola of the immersed perithecia. Saccardo, in Sylloge, gives the perithecia as 200—225 *u*, obtusely papillate, and at length subprominent; asci cylindrical, 56 x 4 *u*; sporidia didymous, upper cell globose (4 *u*), lower cell subovate (4 x 3 *u*), hyaline. According to Tulasne & Broome, the club-shaped body is not the true stroma, but either *Clavaria ligula* or *Spathularia flavida*, bearing the *Hypocrea* as a parasite.

B. *Stroma pulvinate, disciform or effused.*

Sporidia 2-celled, easily separating in the middle.

a. Stroma pulvinate, or discoid.

1. *Sporidia hyaline.*

21. HYPOCREA RUFA (Pers.)

Stromata gregarious, superficial, subhemispheric, elliptical, or irregular in shape, mostly ½—1 cm. in diam., convex when fresh, contracted and rugose when dry, nearly brick-colored, punctulate by the slightly projecting ostiola, whitish within; asci cylindrical, nearly sessile, 65—75 x 4—5 *u*, with 8 one-seriate, didymous sporidia, composed of two subequal, hyaline, subglobose, or subcubical cells, each 3—4 *u* in diam.

22. HYPOCREA LENTA (Tode). Fr. S. M. II, p. 349.

"Stromata gregarious, 2—3 lin., broad, thick, margin repand, disk nearly plain, partially free from the matrix; perithecia minute, globose, immersed, ostiola punctate, minute." The only specimens of this species in our possession was sent from California by Dr. Harkness and is on wood of fir (Herb. Hark. 3496). In this specimen, the stromata are ¼–½ cm. in diam., nearly round, central portion adnate, leaving a narrow, free margin closely applied to the surface of the wood. The pale, globose, carnose-membranaceous, peripheric perithecia (200—220 *u* in diam.) lie in a single layer, their ostiola very prominent and distinctly roughening the surface of the dirty-black stroma. Asci cylindrical, 80—110 x 5—6 *u*, without paraphyses, containing 8 two-celled sporidia, each cell subcubical, or nearly globose and 4—4½ *u* in diam., or slightly ovoid, 4—5 x 3—3½ *u*.

23. HYPOCREA SCHWEINITZII, Fr. Elench. II, p. 60. (*H. contorta*, Schw. Syn. N. Am., 1224. N. A. F., 156.)

Stroma as in the preceding species, except that the central adnate portion is smaller, and, in well-grown specimens, the margin is distinctly undulate and sublobate; perithecia immersed, globose, or subovate (150 *u*), scarcely roughening the surface, which is nearly punctate from the minute, slightly prominent ostiola. Asci cylindrical, 60—65 x 3½ *u*, without paraphyses, containing 8 two-celled sporidia, composed of two globose, hyaline cells, 3—3½ *u* in diam., and readily separable. On bark and wood. Common.

(To be continued.)